



United States
Environmental Protection
Agency

EPA Proposes Apache Blast Cleanup

Copper Basin Mining District Site
Polk County, Tennessee

February 2004

The EPA is proposing alternatives to clean up granulated slag at the Apache Blast area of the Copper Basin site.

- Learn more at an Open House—Feb 19, 5 to 7 pm, GSHI office, 127 Main St., Ducktown, Tennessee
- Provide input during the public comment period: Feb 19 to Mar 19, 2004

Introduction

The U.S. Environmental Protection Agency (EPA) has completed a study, formally called an Engineering Evaluation and Cost Analysis (EE/CA), to evaluate cleanup alternatives for the Apache Blast area of the Copper Basin Mining District Site (Copper Basin Site). The Apache Blast evaluation is one in a series of investigations the EPA is conducting in the Copper Basin.

Site Description and Background

The Apache Blast area covers approximately 12 acres, about one mile northwest of the town of Copperhill, Tennessee (Figure 1). The area lies on the west side of Highway 68, across from the Intertrade Holdings plant and next to the Ocoee River.

From 1980 to 1994, Apache Blast, Inc., processed granulated slag for the sandblasting industry. When operations ended, waste materials and equipment were left in place.

What is granulated slag?

Slag, a waste material produced in the smelting process, contains zinc and other heavy metals. When hot slag from smelters is cooled in water, it forms small pieces called granulated slag.

In 1996, the Tennessee Department of Environment and Conservation (TDEC) moved about 42,000 cubic yards of slag from Apache Blast to the Mary Mine area, about a mile away. This action was taken both to make the area more attractive to visitors coming through the Copper Basin for the Olympic Games and to reduce runoff and leaching of contaminants into the Ocoee River. Not all of the slag was removed; an estimated 18,000 cubic yards remain. Most of the Apache Blast area is covered with a layer of granulated slag from one to 30 inches deep.

Summary of Study Findings

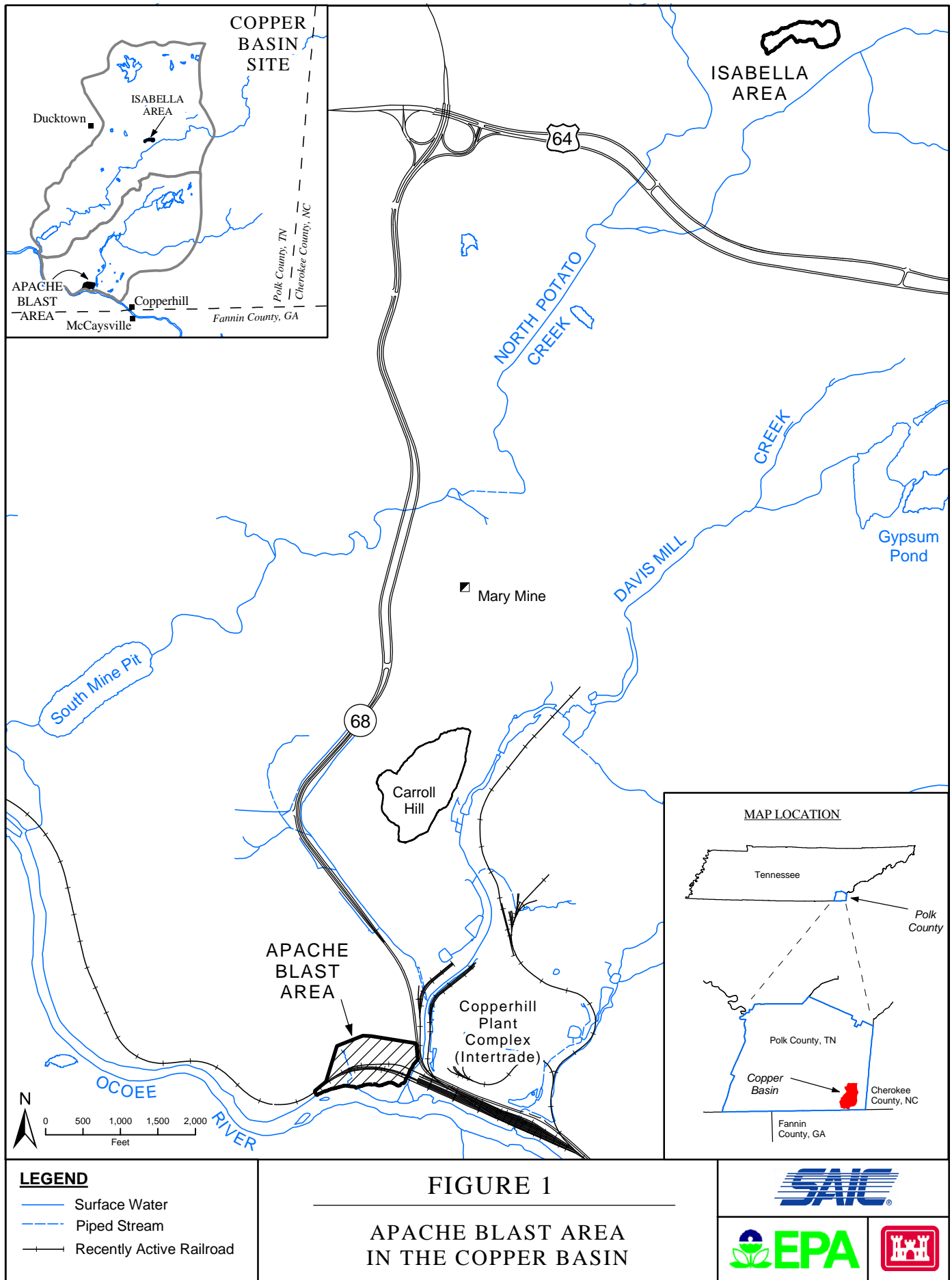
In 2003, the EPA collected data on soil, solid waste, and surface water from the Apache Blast area. Numerous metals were found in the samples of soil and solid waste, including arsenic, cadmium, calcium, cobalt, copper, iron, lead, magnesium, manganese, and zinc.

Surface water was sampled from a small, unnamed channel that flows south across the area to the Ocoee River. The channel carries water from springs on the north of the Apache Blast property. The water flows through a culvert for approximately half the length of the channel. Sampling results showed that concentrations of metals in the water increase as it flows from the source of springs toward the Ocoee River.

Risk Evaluation

The EPA evaluated potential risks to human health and the environment that could be caused by releases of hazardous substances from the Apache Blast area if no cleanup action occurs. The risk evaluation assumed that the Apache Blast area will be used only for industrial purposes in the future. This is a less stringent standard than if the possible future use of the property is residential. The EPA believes residential use of this property is unlikely.

The concentrations of lead in the soil and waste material that now cover the area are considered hazardous to human health. Arsenic and iron also exceed risk-based levels.



Using conservative maximum limits of potential exposures, these metals could pose a potential risk to future industrial workers at the Apache Blast area if no cleanup occurs.

The risk evaluation also considered potential ecological effects if no cleanup occurs. Concentrations of several metals on the Apache Blast site, especially copper, lead, and zinc, are harmful to plants, animals, insects, and aquatic life. With no cleanup action, runoff and erosion of waste material from the area will continue to affect the Ocoee River.

Apache Blast Cleanup Objectives

The EPA has the following objectives for the Apache Blast cleanup action:

- Reduce potential human and ecological exposures to metals at the site.
- Reduce metals entering the Ocoee River due to surface runoff and erosion from the site.
- Reclaim and restore the Apache Blast area so that it supports a viable and sustainable habitat, similar to other areas along the Ocoee River corridor.

Alternatives Evaluated

The EPA evaluated five alternatives to meet the objectives for the Apache Blast cleanup action. The five alternatives were evaluated according to EPA guidance for conducting an engineering evaluation and cost analysis. The EPA compared the alternatives using detailed criteria under the general categories of effectiveness; implementability, including community acceptance; and cost.

Alternative 1: No Action (required alternative)

Required as a baseline for comparing alternatives.

Alternative 2A: Relocate Waste from Flood Plain, Regrade Site, and Install Vegetated Cover

Slag and waste materials would be moved from the Ocoee River flood plain to higher ground, and the material would be left on the site. The area would be graded, and a layer of topsoil up to 18 inches thick would be placed over the flood plain and slag areas. The soil cover would be seeded with grass and planted with native vegetation. A surface water cutoff trench would be installed around the perimeter to prevent water flowing across and running off the site. Surface water and vegetated areas would be monitored to verify improvements in water quality and vegetation growth.

Alternative 2B: Consolidate Waste above Railroad Tracks, Regrade Site, and Install Vegetated Cover

Waste materials would be removed from the flood plain and from below the railroad tracks and relocated to the area above the railroad tracks. Remaining site work would be the same as alternative 2A.

Alternative 3: Onsite Disposal, Regrade Site, and Install Vegetated Cover

Approximately 18,000 cubic yards of contaminated material would be excavated and removed to an appropriate location on the Copper Basin Site. Locations considered include the Mary Mine area, where slag from the Apache Blast area was disposed of in 1996; the Isabella slag area; or the Carroll Hill area, shown on Figure 1. The remaining activities would be the same as those in Alternative 2A.

Alternative 4: Offsite Disposal, Culvert Removal, Regrade Site, and Install Vegetated Cover

Waste material would be excavated as described in Alternative 3, and soil would be removed from over the culvert above and below the railroad tracks. Contaminated soil and wastes would be transported to an appropriate permitted disposal facility. Most of the culvert that carries the spring water would be removed, except for the portion under the railroad tracks. The remaining activities would be the same as Alternative 2A.

EPA's Proposed Action for the Apache Blast Area

The EPA recommends Alternative 2B: Consolidate Waste above Railroad Tracks, Regrade Site, and Install Vegetated Cover, to address waste at the Apache Blast area. The EPA believes this alternative provides the best balance in meeting the evaluation criteria and achieving the cleanup objectives. The estimated cost to implement this alternative is \$234,000, plus \$1,300 per year for operation and maintenance.

For more information, please contact...

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Information Repository

Chamber of Commerce Office

134 Main Street
Ducktown, TN
Phone: 423-496-9000
Hours of Operation:
9 to 5, Mon through Fri

Office of Glenn Springs Holdings

127 Main Street
Ducktown, TN
Phone: 423-496-7900
Hours of Operation:
7:30 to 4:30, Mon through Fri

U.S. EPA Region 4

Records Center

61 Forsyth St, SW
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U.S. EPA on the Internet

Copper Basin Site

www.epa.gov/region4/waste/copper

U.S. EPA Headquarters

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